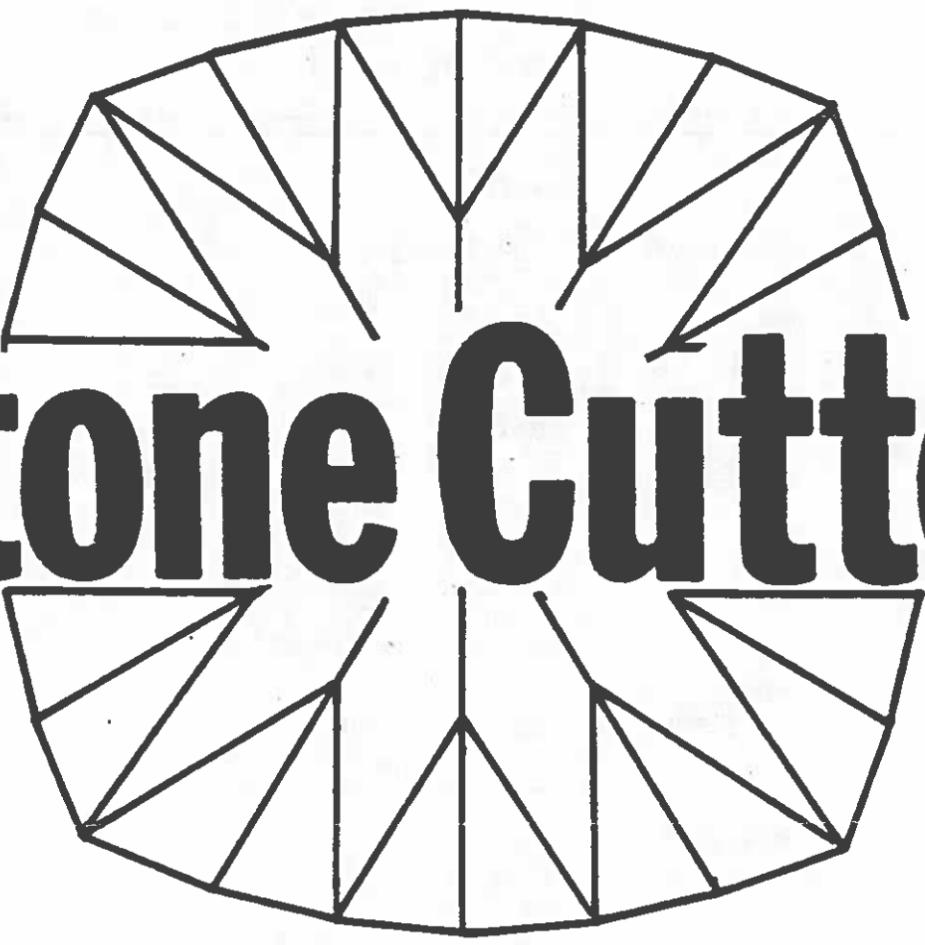


**NORTH CAROLINA  
LAPIDARY SOCIETY**

**February  
1983**



**Stone Cutter**

**MEETINGS: *SUNDAY***

Third ~~Thursday~~ each month.

**GEMCRAFTERS**

2106 Patterson St.

Greensboro, NC 27407



MEETING DATE : February 20, 1983  
TIME : 2:30 PM  
PLACE : GEMCRAFTERS  
2106 Patterson St.  
Greensboro, NC  
PROGRAM : MEMBERSHIP CRITIQUE on goals and  
programs of the North Carolina  
Lapidary Society for 1983 and  
beyond. COME. MAKE THE SOCIETY  
WHAT YOU WANT IT TO BE.

---

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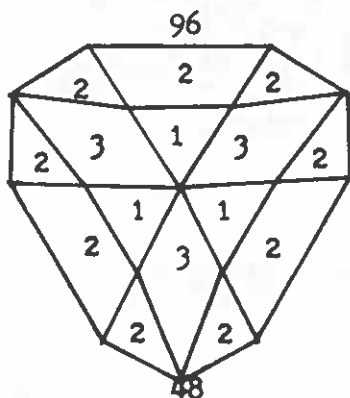
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# The DEBCORJAM Triangle

by Walt Hawn

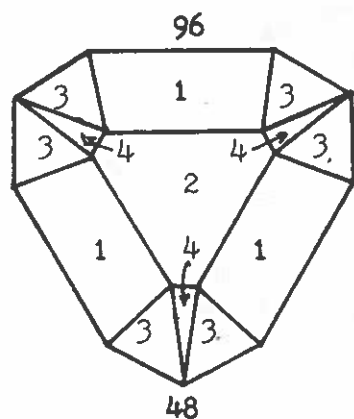


This original facet design is named for the members of Walt's family; wife, DEBORAH; daughter, CORINNE; and son JAMES.

First, preform the girdle at 90 degrees indexing 96 - 32 - 64. Then cut the girdle corners at 90 degrees indexing 08 - 24, 40 - 56 and 72 - 88.

## PAVILION

STEP	ANGLE	INDEX
1.	45°	96 - 32 - 64
2.	55°	96 - 32 - 64 08 - 24 - 40 56 - 72 - 88
3.	40° to 42°	16 - 48 - 80 Adjust step 3 angle so that facets "meet" at culet and girdle.



## CROWN

STEP	ANGLE	INDEX
1.	42°	96 - 32 - 64
2.	0°	Any TABLE
3.	45°	08 - 24 - 40 - 56 72 - 88 Adjust step 3 angle for size of table.
4.	38° to 40°	16 - 48 - 80 Adjust step 4 angle so that facets "meet" at table and girdle.

Numbers inside diagrams refer to steps in the cutting sequence.

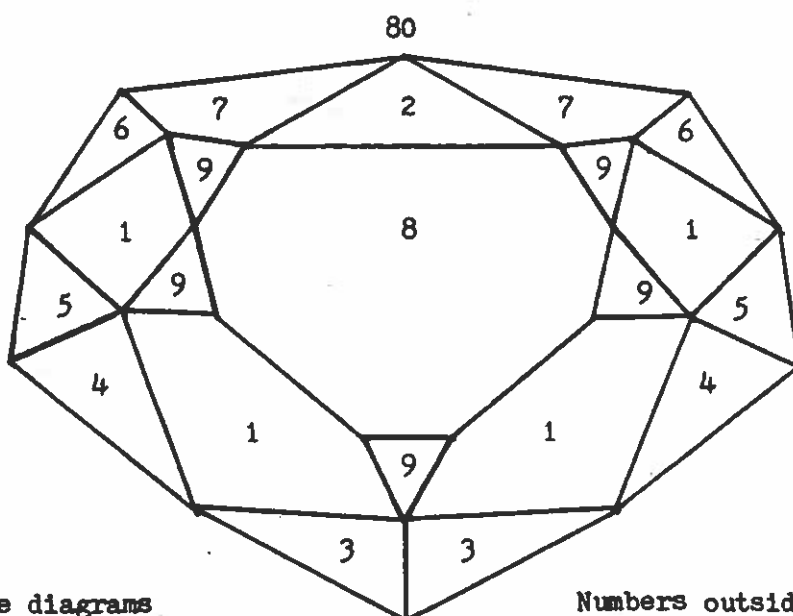
Numbers outside diagrams are index settings.

# PENTA-FOX

by Thomas J. Brown

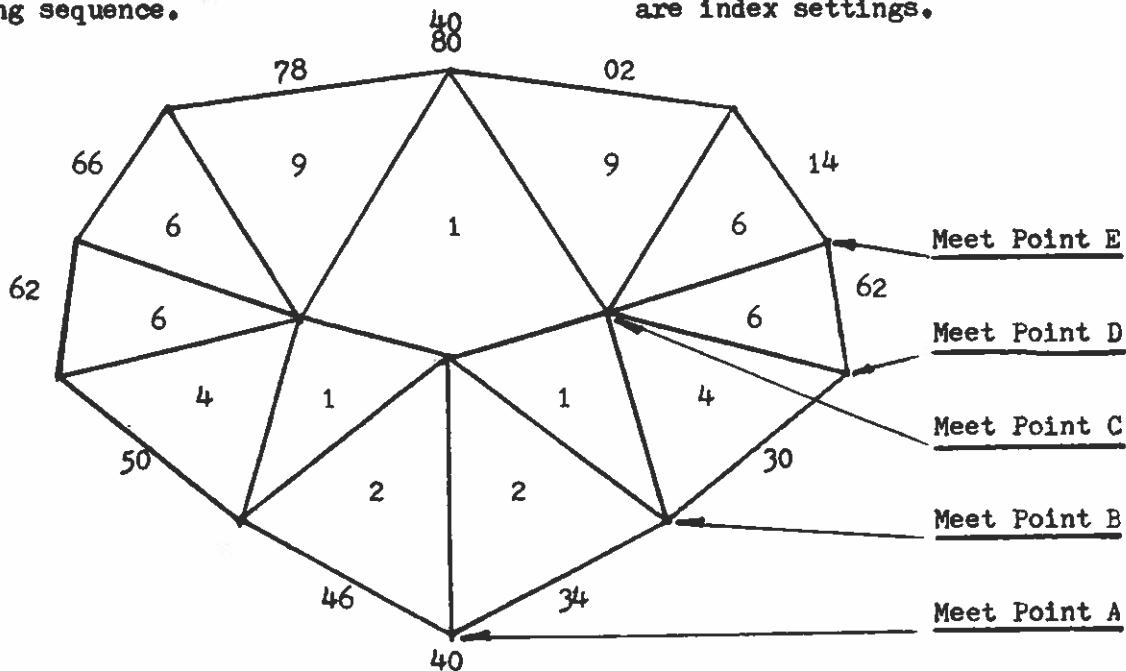
Ideas for facet designs come from literally everywhere. But, who would have thought that a fox's face on the logo of a local building supply / home improvement firm could provide inspiration for facet innovation? With five main facets, the name Penta-Fox is a 'natural'. As you look into the finished stone through the large table, you can see the twinkle in Br'er Fox's eyes, and, with a little imagination you can even see his whiskers twitch.

This is a Meet Point design. No preform is necessary. An 80 index is used. Angles are for quartz.



Numbers inside diagrams  
are cutting sequence.

Numbers outside diagrams  
are index settings.



PAVILION

<u>STEP</u>	<u>ANGLE</u>	<u>INDEX</u>	<u>COMMENT</u>
1	43	80-32-48	Cut to same stop to establish culet.
2	45	34-46	Cut to culet.
3	90	34-46	Cut to Meet Point A.
4	45	30-50	Cut to Meet Point B.
5	90	30-50	Cut to Meet Point B.
6	44	18-62 14-66	Cut to Meet Point C.
7	90	18-62	Cut to Meet Point D.
8	90	14-66	Cut to Meet Point E.
9	47.1	02-78	Cut to Meet Point C.
10	90	02-78	Cut to level girdle.

CROWN

<u>STEP</u>	<u>ANGLE</u>	<u>INDEX</u>	<u>COMMENT</u>
1	42	16-32 48-64	Cut to even girdle thickness.
2	45.5	80	Cut to even girdle thickness.
3	60	34-46	Cut to level girdle.
4	60	30-50	" " " " .
5	54	18-62	" " " " .
6	49	14-66	" " " " .
7	55.5	02-78	" " " " .
8	0	ANY	Cut and polish table.
9	32.3	13-67	Break facets-
	28	58-22	adjust as necessary.
	27	40	

NOTE: The crown break facet angles are for a table width approximately 65% of the width of the stone. Adjust them as necessary for the size table you select.

# The Brilliant Emerald Cut

by Roy N. Greene

This design was developed to make more attractive emerald cuts from the various diamond substitutes such as YAG, GGG and Cubic Zirconium. A 64 index is used and the angles given are true only for stones such as a 7x5mm, having a ratio of 1.4:1.

This stone is most easily cut by starting with the crown and then cutting the pavilion so that you have an even girdle line to shoot at.

## Cutting Sequence:

First, Cut and polish table in 45° angle dop.

Second, Preform girdle outline at 90°, indexing 64, 32, 16, 48, 8, 24, 40 and 56. Take care to get dimensions as close as possible to a ratio of 1.4:1.

Cut crown facets as follows:

35° indexing 64, 32, 16, 48, 8, 24, 40 and 56.

21° indexing same as above.

42° indexing same as above.

Polish using same order as cutting.

After transferring, carefully orient stone in facet machine and cut pavilion in following sequence.

#1 facets, 41° indexing 10, 22, 42 and 54.

Cut to point where girdle thickness is that desired.

#2 facets, 43° indexing 6, 26, 38 and 58.

#3 facets, 43° indexing 8, 24, 40 and 56.

#4 facets, 44° indexing 32 and 64.

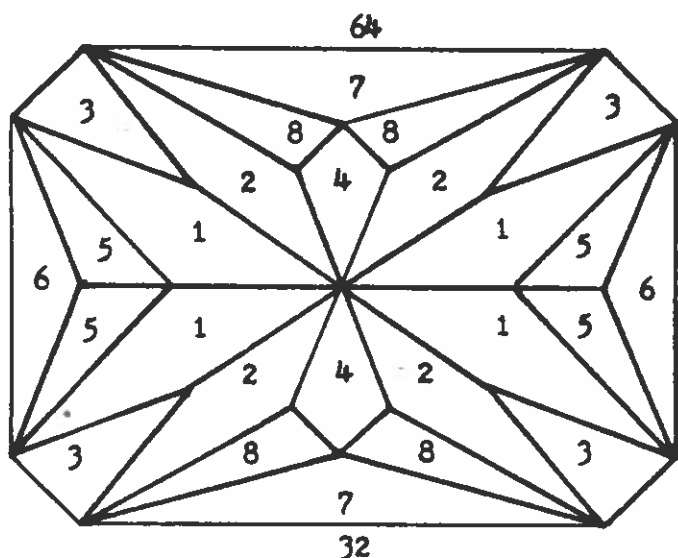
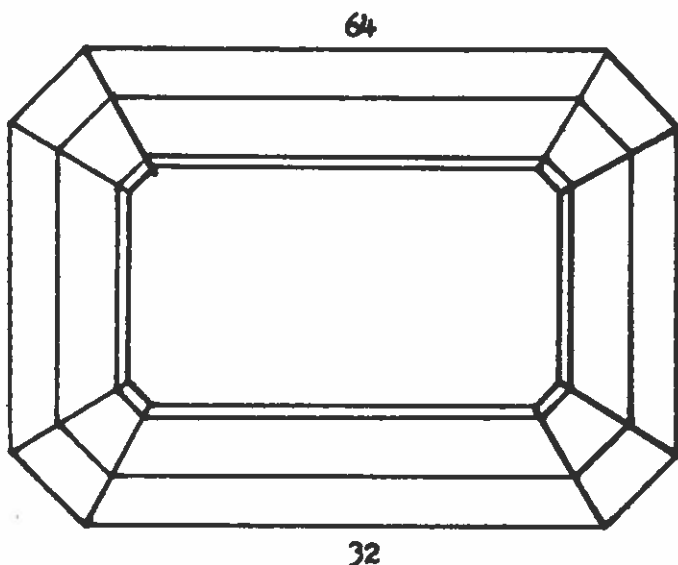
#5 facets, 43° indexing 12, 20, 44 and 52.

#6 facets, 60° indexing 16 and 48.

#7 facets, 73° indexing 32 and 64.

#8 facets, 48° indexing 3, 29, 35 and 61.

Please note, the #8 facets remove very little material and tend to overcut very easily. It would be wise to under cut them and polish in the meets.



NEW SYNTHETIC STONE HARDER THAN DIAMOND

General electric scientists announced the hardest substance ever made by man or nature, an entirely new material.

It is a crystal hard enough to scratch diamond and able to withstand twice as much heat. Named BORAZON, it is expected to have far reaching impact in industrial polishing and cutting operations.

The inventor, Dr. Wentorf, started with Boron Nitride, commonly called white graphite and very similar in appearance and feel to talcum powder. Using pressures of about one million pounds per square inch and temperatures of over three thousand degrees fahrenheit, he changed the crystals structure from hexagonal to cubic, like diamond.

While a diamond burns up at 1600 degrees, Borazon can withstand temperatures up to 3500 degrees.

from Tarheel Tailings, November, 1982

\*\*\*\*\*

TYPES OF OPALS

by James Wally - BACK BENDERS GAZETTE, Jan., 1983

Harlequin: This variety looks like the costume of a clown and is one of the rarest and most valuable of precious opals.

Broadflash: A pattern with a flash of color that is small or that covers the whole face of the stone. Opal of this variety is very valuable.

Pinfire: A pattern that looks like the point or head of a pin. It is quite common.

Cloudy: A variety that is like a mist of clouds which has fire permeating the clouds. Spencer, Idaho is the only known variety with this effect.

Jelly : A variety that is transparent with any of the descriptions of fire. The jelly type is very valuable.

Turtle: A variety that has irregular shapes arranged like the pattern of a turtle's back. The pattern is usually blue and orange in color. Spencer opal is the only known occurrence of this opal.

Pink Base: This pink-bodied opal occurs in the upper part of the mine and contains all the descriptions of fire.

Reprinted from Prospector's Pickings, December, 1982.

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OOPS!!! ANOTHER CORRECTION.

Designer, Paul Smith has brought to our attention an error in the cutting instructions for the 3-STAR GENERAL cut published in the STONE CUTTER, January, 1983. In STEP 1 for the crown the first index number should be 68 not 64. STEP 1 for the crown should appear as follows:

<u>STEP</u>	<u>ANGLE</u>	<u>INDEX</u>
1.	38.2°	68-04, 20-28, 44-52

\*\*\*\*\*

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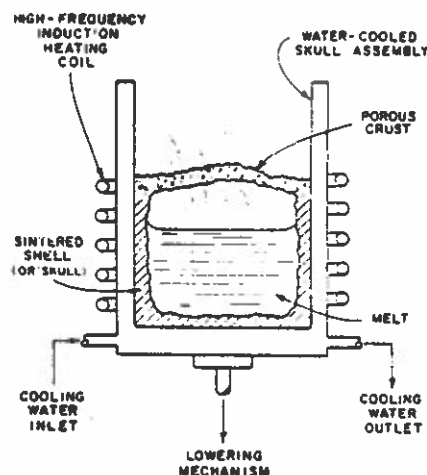
## How CZ is Grown and what it means to you

CZ has a fantastically high melting point. Nothing on earth can serve as a crucible to hold the melt, without contaminating it, except zirconia itself.

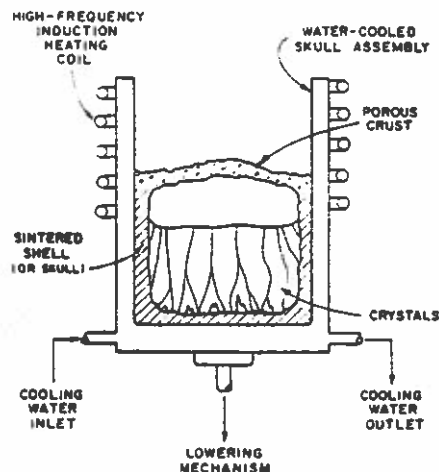
In the system shown here, zirconium oxide is made to act as its own crucible. This is done by heating the center of the material with high-frequency energy. Similar to the way a microwave oven works. An assembly cooled by water prevents the edges of the material from melting. The crust, or shell, of unmelted material is referred to as the "skull". Hence, the name skull-melting process.

The crystals are made to form, or grow, by lowering the water-cooled assembly in relation to the heating coils. Progressive cooling produces crystallization.

Skull-melting equipment is extremely expensive to build and operate. The cost of cubic zirconia is linked to the cost of energy, so the price of the material will probably rise with the price of energy.



SKULL-MELTING SYSTEM  
PRIOR TO DIRECTIONAL-SOLIDIFICATION



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